

Remarks/Arguments:

Applicant's representatives thank Examiner Takeuchi for the courtesy and time extended to them during the interview conducted on June 8, 2011. The claims are being amended in a manner consistent with the discussion with Examiner Takeuchi and as presented to him in the interview agenda before the interview. In particular, claims 18 and 26 are amended to become system claims reciting both the ceramic wall-flow filter and the apparatus comprising the elements previously claimed, namely, a pressurisable container, a vacuum pump, at least one reservoir, and a pump for dosing the isolated and evacuated channels with a pre-determined quantity of the liquid, as recited in claim 26. In addition, claims 18 and 26 have been amended to specify that the apparatus is "for dispersing at least one catalyst component in the channels of the filter walls." Support for the amendments to claims 18 and 26 can be found throughout the application, in particular in the Abstract and in Figure 1; in the discussion in the background emphasizing that the invention is directed to a wall-flow filter versus a flow-through filter; at page 3, lines 16-21; at page 7, lines 6-19, 26 and 27 ("the filter of the present invention"). Claims 21 and 27 have been amended for consistency. No claims have been added or cancelled, so claims 1-8, 10, 15, 16, 18, and 21-27 remain as the pending claims in this application.

There are three independent claims in this application: Process claim 1 and system claims 18 and 26. The previous obviousness rejection of the process claims was withdrawn; the Examiner has agreed that Shimrock is not applicable to a "wall-flow meter (*sic*, filter)." Apparatus claims 18, 26, and 27 were rejected under 35 U.S.C. § 102(b) as anticipated by Shimrock, because the material or article worked upon does not limit the apparatus claims. See MPEP § 2115. Also, the following has been deemed a mere preamble limitation reciting purpose or intended use: "A catalysed ceramic wall-flow filter having filter walls, wherein said filter walls define a plurality of channels and have a pore structure, the plurality of channels in the wall-flow filter are plugged at an inlet end or an outlet end of the wall-flow filter." MPEP § 2111.02 (II). Similarly, apparatus claims 18 and 21 were rejected under 35 U.S.C. § 103 as obvious based on Hoyer et al. (GB 1,515,733). Hoyer, like Shimrock, is not applicable to wall-flow filters but only flow-through filters (See, e.g., page 1, lines 38-43; page 7, lines 73-81, and the discussion throughout as a rigid, honeycomb structure having a plurality of parallel passageways or conduit). This should be contrasted with a wall-flow filter as now positively

recited in the system claims, in which the passageway or flow conduit flows across the filter walls. The final rejection of the apparatus claims is of claims 26 and 27 as obvious based on Hoyer in view of Shimrock.

In short, all of the rejections of the apparatus claims rely on Shimrock and/or Hoyer and the fact that the wall-flow filter was not positively recited in the claims, so it was not given patentable weight. As explained during the Examiner Interview, Applicant has now amended the apparatus claims to become system claims so that the feature of the wall-flow filter must now be given patentable weight. The Examiner is respectfully referred to the end of MPEP § 2115, which states:

Note that this line of cases is limited to claims directed to machinery which works upon an article or material in its intended use. It does not apply to product claims or kit claims (i.e., claims directed to a plurality of articles grouped together as a kit).

Therefore, in view of the amendments to claims 18 and 26, Applicant respectfully requests that the rejections of all of the apparatus claims be withdrawn.

Turning next to the process claims, independent claim 1 has been rejected as obvious based on Brisley (WO 01/12320) in view of Hoyer and alternatively as obvious based on Hoyer in view of Brisley. As explained to Examiner Takeuchi, the application emphasizes the importance of avoiding caking. The Examiner is referred to the differences in Figures 2 and 3, with Fig. 2 showing undesirable caking occurring using the process of EP 0 766 993. See page 2, line 28 through page 3, line 15; page 10, lines 9-14; and page 12, lines 10-20 of the application. There, the application states that the present invention can achieve a homogenous dispersion of coating throughout the walls of the filter. For completeness, Applicant notes that the Examiner Interview Summary Record indicates that the claimed method "provides a homogeneous dispersion of coating within the wall, and avoids caking on the wall" and that "the improvement of the instant invention is a homogeneous dispersion of the catalyst wash throughout each channel wall." While the Applicant confirms that the claimed method reduces caking, Applicant notes that the claimed method and system are capable of achieving a *homogeneous* dispersion of catalyst coating within the wall, but may also provide a *non-*

homogeneous dispersion. In any event, the claimed invention reduces caking. Also, as stated at page 4, lines 1-4, "An advantage of the present invention is that, by removing the air from the pore structure of the ceramic wall-flow filter prior to contacting the surface of the channel walls, we have found that the permeation of the liquid in the channel walls is greatly facilitated." The entire wall-flow filter is under vacuum; there is no pressure drop across the filter but, instead, the invention achieves its advantage by "evacuating the channel walls" and introducing the washcoat into a system which is already under vacuum. See page 9, lines 29-31 of the application, which states:

An aspect of the invention is that the entire filter is "soaked" in the vacuum. This prevents caking of washcoat components at a surface of a channel, e.g., as in the method disclosed in EP-A-766993.

In view of this background, Applicant contends that the effect achieved by the process of the present invention was not predictable in view of the prior art references and that the results achieved in a system of a flow-through filter could not be easily translated to a process and system using a wall-flow filter. Moreover, neither of the obviousness rejections using *Brisley* and *Hoyer* should be maintained for other reasons.

Turning first specifically to the obviousness rejection of *Brisley* in view of *Hoyer*, the proposed modification would render *Brisley* unsatisfactory for its intended purpose. See MPEP § 2143.01, Section V. As described in *Brisley*, the oxidation catalyst oxidizes NO to NO₂ which then continuously combusts the soot trapped in the gas permeable zone of the wall-flow filter of *Brisley*. Page 2, lines 22-31 of *Brisley*. As mentioned above when comparing Fig. 2 to Fig. 3 in the present application, the present invention can achieve a dispersion of the catalyst in or throughout the filter walls. On the other hand, in *Brisley*, it is desirable to have the catalyst loaded on one surface of the wall over a region where the catalyst wall is impermeable. Based on the flow path in the impermeable zone upstream of the permeable zone in *Brisley*, it would be undesirable to have any portion of the catalyst dispersed into the impermeable wall, but instead the catalyst should be contacting the gas surface. If, however, the methodology of *Hoyer* were applied to *Brisley*, the oxidation catalyst would be drawn into the wall and an insufficient amount would be remaining on the surface to convert NO to NO₂ for later use in combusting the soot. Importantly and as mentioned above, it should be noted that the zone

where the oxidation catalyst resides is gas impermeable, so all of that portion of the catalyst within the wall (the vast majority) would be unavailable to oxidize NO to NO₂. In addition, the proposed modification would change the principal of operation of Brisley. See MPEP § 2143.01, Section VI. To achieve the claimed invention (i.e., a wall-flow filter), the catalyst must remain porous, at least to some extent, at the regions where the catalyst is dispersed. However, Brisley relies on achieving oxidation of NO to NO₂ upstream of the gas permeable region of the wall-flow filter.

Turning next to the obviousness rejection of Hoyer in view of Brisley, Applicant traverses this rejection because no adequate reason has been provided for modifying Hoyer to use it in conjunction with a wall-flow filter such as that described in Brisley. Page 15, lines 7-9 of the Office Action reads:

As a result, it would have been obvious to a person of ordinary skill at the time of the invention to use the method of Hoyer to coat the catalyst support members of a wall-flow filter since wall-flow members have catalyst support members.

Presumably, the phrase "as a result," is intended to connote some reason for combining Hoyer with Brisley. However, the preceding paragraph of the Office Action merely copies from the rejection of Brisley in view of Hoyer and describes that Brisley allegedly teaches step (b) ("contacting a surface of the evacuated channel walls with a liquid") but does not teach step (a) ("reducing the pressure in a pore structure of the channel walls relative to the surrounding atmospheric pressure to provide evacuated channel walls") or the wherein limitation of claim 1.

Furthermore, the remainder of that portion of the alleged reason for combining Brisley with Hoyer (i.e., "since wall-flow members have catalyst support members") is conclusory and circular. As set forth by the Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), it is necessary to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. It is well settled that rejections under 35 U.S.C. 103(a) cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. See *KSR*. Any such conclusions must be supported by substantial evidence on the record. *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Here,

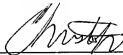
the naked statement that a reason for combining Brisley with Hoyer is because "wall-flow members have catalyst support members" is conclusory. In any event, it is not clear why the Examiner is mentioning "catalyst support members."

For completeness, Applicant notes that Brisley does not teach contacting a surface of the evacuated channel walls with a liquid (step (b)), as alleged in the Office Action. The Examiner cites to page 2, line 6-13 and page 10, lines 14-16 of Brisley as allegedly teaching this step. However, neither those citations nor elsewhere does Brisley disclose applying the evacuated channel walls of the wall-flow filter with a liquid containing at least one catalyst component. The description at page 7, lines 10-27, fails to disclose this step. Also, the description at page 10 involves dipping one end of the monolith into an aqueous dispersion of a certain washcoat and drying it, then dipping the other end of the monolith into a different washcoat and then drying it again. Hoyer fails to disclose this step either (i.e., evacuated channel walls of a wall-flow filter).

Claim 24 has only been rejected as obvious over Brisley in view of Hoyer and further in view of Twigg (US 2007/0028604). Twigg does not qualify as prior art under Sections 102(a) or 102(b) because it was published after the International filing date of the present application. In order to qualify as prior art under Section 102(e), the reference must be a published application, a granted patent, or an International application filed by another under the Patent Cooperation Treaty (which designates the U.S. and is filed in English) and filed in the United States *before* the invention by the applicant. 35 U.S.C. § 102(e). Twigg et al. does not qualify as prior art because the PCT application (PCT/GB04/00882) for Twigg et al. was filed on March 5, 2004, which is the same date as the filing date of the priority application in the present case, not before. Nonetheless, Twigg et al. is owned by Johnson Matthey, which is also the assignee of the present case, so Twigg et al. cannot be used in an obviousness rejection under 35 U.S.C. § 103(c)(1) even if it qualified as prior art under Section 102(e). Accordingly, claim 24 is allowable for this reason, as well as in view of its dependency on claim 1.

For all of the foregoing reasons, Applicant respectfully requests reconsideration and allowance of the claims. Applicant invites the Examiner to contact his undersigned representative if it appears that this may expedite examination.

Respectfully submitted,



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